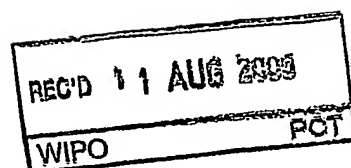


PATENT COOPERATION TREATY

PCT


 INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
 (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 118656	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2004/001349	International filing date (day/month/year) 20.09.2004	Priority date (day/month/year) 22.09.2003
International Patent Classification (IPC) or national classification and IPC B65G 17/20, B65G 47/64		
Applicant Eton Systems AB et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 3 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 22.04.2005	Date of completion of this report 27.07.2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Ann Börjeson / MRO Telephone No. +46 8 782 25 00

Form PCT/IPEA/409 (cover sheet) (January 2004)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/001349

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1 - 12 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 13 - 15 received by this Authority on 24 . 05 . 2005
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1 - 11 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/001349

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-10</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-10</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-10</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: US4936222

D2: US3759190

Document D1, which is considered to represent the most relevant state of the art, discloses a product carrier movable along a conveyor track from which the subject-matter of claims 1-10 differs in that the carrier arms are both pivotally suspended from each wheel unit and also pivotally supported in a holder. The carrier also contains a positioning mechanism to maintain a controlled distance between the wheel units. The two arms of the product carrier in D1 are rigidly connected to each other, involving that, if the conveyor is inclined, then the carrier and the carried objects will also be inclined.

Document D2 does not disclose anything about pivotability between carrier arms and the wheel units. Thus, it must be assumed that a rigid connection is present.

By means of the product carrier according to the invention, it is possible to maintain a controlled distance between the wheel units without having a direct and rigid connection between the wheel units, simultaneously allowing the carrier arms and the holder with carried products to hang down substantially vertically, independently of the inclination of the holder.

Thus, the invention defined in claims 1-10 is not previously known and it is not considered obvious to a person skilled in the art. Accordingly, it is novel and considered to involve an inventive step. The invention is industrially applicable.

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CLAIMS

1. A product carrier, moveable along a conveyor track (33, 34) in a conveyor arrangement, and designed as a trolley, which has at least two wheel units (3, 4) which are designed to be moved along the conveyor track, and a carrier arm (5, 6) which is pivotally suspended from each wheel unit and which is provided with carrier members (7, 8) for the products that are to be conveyed, said carrier arms (5, 6) being connected to one another by means of a positioning mechanism (9/45, 50, 51), **characterized in that** the carrier arms (5,6) are pivotally supported in a holder (10) in which the positioning mechanism is arranged and that said positioning mechanism maintains a selected essential distance (a) between the wheel units (3,4) regardless of the inclination of the track.

2. The product carrier as claimed in claim 1, **characterized in that** the positioning mechanism (9/45, 50, 51) comprises a parallel guide mechanism which essentially keeps the carrier arms (5, 6) parallel to one another, regardless of the inclination of the track, so that said distance (a) in relation to one another is largely maintained.

3. The product carrier as claimed in claim 1, **characterized in that** the positioning mechanism (9) comprises a toothed gearing having a number of gearwheels (19, 20, 21), which are rotatably supported in the holder (10).

4. The product carrier as claimed in claim 2 and 3, **characterized in that** the holder (10) is designed as a box in which the gearwheels (19, 20, 21) are rotatably supported and that the gearwheels comprise two outer gearwheels (19, 20) which are designed to follow the swiveling movements of the carrier arms (5), and an intermediate gearwheel (21) which intermeshes with the outer gearwheels, the two outer gearwheels having the same diameter.

5. The product carrier as claimed in claim 2, **characterized in that** the parallel guide mechanism (45, 50, 51) has parallel arms (45, 50, 51), which are directly or indirectly articulated in the carrier arms (5, 6) at a uniform distance.

6. The product carrier as claimed in claim 1, **characterized in that** the wheel units (4, 5) can be turned about their axes of rotation (17, 18) for adjustment to curved sections of the conveyor track (33, 34).

7. The product carrier as claimed in claim 6, **characterized in that** the distance (a) between the wheel units (5, 6) is variable within narrow limits.

8. The product carrier as claimed in claim 7, **characterized in that** the turning of the wheel units (3, 4) is achieved by torsion of the carrier arms (5, 6) about their longitudinal axis.

9. A conveyor arrangement comprising a first conveyor (33) and at least a second conveyor (34) together with a number of product carriers (1) designed as trolleys which are moveable along the conveyors for moving products, the first conveyor comprising a continuous track, and the trolleys having wheel units (3, 4) designed to run along the track, and the second conveyor comprising a chain conveyor in the form of a loop of links (36, 37) designed with members for receiving and holding the transported trolleys, said holding members being situated at a selected spacing interval (b) from one another, **characterized in that** the wheel units (3, 4) have pivotally suspended carrier arms (5, 6), which are connected to one another by means of a positioning mechanism (9/45, 50, 51) for maintaining a selected positional relationship between the wheel units, so that the wheel units essentially maintain an axial distance (a) from one another which largely corresponds to said spacing interval (b), and that the carrier arms are pivotally supported in a holder (10) in which said positioning mechanism is arranged.

10. The conveyor arrangement as claimed in claim 9, **characterized in that** the reciprocal axial distance (a) is variable within narrow limits for adjustment to changes in the spacing interval (b) of the second conveyor (34).